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**SEMICONDUCTOR HIGH DIELECTRIC CONSTANT DECOUPLING  
CAPACITOR STRUCTURES AND PROCESS FOR FABRICATION**

**ABSTRACT OF THE INVENTION**

Apparatus and method for providing high dielectric constant decoupling capacitors for semiconductor structures. The high dielectric constant decoupling capacitor can be fabricated by depositing high dielectric constant material between adjacent conductors on the same level, between conductors in successive levels, or both, to thereby provide very large capacitance value without any area or reliability penalty.